

EXECUTIVE OFFICE OF THE PRESIDENT  
OFFICE OF SCIENCE AND TECHNOLOGY POLICY  
WASHINGTON, D.C. 20502

May 5, 2021

**INTERIM PROGRESS REPORT FOR THE HOUSE ARMED SERVICES COMMITTEE;  
SENATE ARMED SERVICES COMMITTEES RE: SECTION 9412 OF THE NATIONAL  
DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2021**

**FROM: White House Office of Science and Technology Policy**

**SUBJECT: Interim Progress Report on the Industries of the Future Act of 2020**

Section 9412 of the National Defense Authorization Act for Fiscal Year 2021, titled “Industries of the Future Act of 2020”<sup>1</sup> (hereafter, “Section 9412” or “this section”), directs that the Director of the Office of Science and Technology Policy (OSTP) submit to Congress a report on Federal research and development investments, infrastructure, and workforce development investments that enable continued United States leadership in industries of the future (IoTf). This interim progress report provides a strategy for delivering a report on Federal R&D spending in quantum information science and nondefense artificial intelligence and other key industries, and demonstrates the continued commitment to prioritizing key technologies through investment. This report, including its attachment, is an interim progress report in advance of a full report to be transmitted after the President’s FY 2022 detailed budget is released.

As stated in paragraph (b)(1) of Section 9412, OSTP must submit a report on enactment of the following section:

*Not later than 120 days after the date of the enactment of this Act, the Director of the Office of Science and Technology Policy shall submit to Congress a report on research and development investments, infrastructure, and workforce development investments of the Federal Government that enable continued United States leadership in industries of the future. This report shall include a definition of IOTF under paragraph (2)(A); assessment of baseline investments in civilian R&D of the Federal government in IOTF (2)(B); a plan to double baseline investments in AI and QIS by FY22 (2)(C); a detailed plan to increase IOTF investments from paragraph (2)(B) to \$10B by FY25 under paragraph (2)(D); a plan leverage investments from paragraph (2)(B)(C)(D) to elicit complimentary investments, inclusive of incentives to do so, by non-Federal entities including through public-private partnerships under paragraph (2)(E); and proposal for the Federal government to implement, including any draft legislation.*

Consistent with Section 9412 paragraph (b)(2)(B), the previous Administration developed a baseline inventory of Federal investments in Artificial Intelligence (AI) and Quantum Information Science (QIS).

The table below shows the previous Administration’s AI and QIS baseline as well as FY 2020 appropriations for AI and QIS from P.L. 116-93. AI and QIS investments from FY 2021 and for the Administration’s FY 2022 Budget Request will be provided following release of the FY 2022 Budget.

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<sup>1</sup> [BILLS-116hr6395enr.pdf \(congress.gov\)](https://www.congress.gov/bills/116/hr/6395/enr/pdf)

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	<b><i>Trump Administration FY 2020 Budget Proposal*</i></b>	<b><i>FY 2020 Enacted Estimate</i></b>
<b><i>Artificial Intelligence</i></b>	<i>\$973.5 Million</i>	<i>\$ 1.118 Billion</i>
<b><i>Quantum Information Science</i></b>	<i>\$435 Million **</i>	<i>\$588 Million</i>

*\*The FY2020 Budget Proposal was the previous Administration’s baseline of investments in QIS and nondefense AI R&D in these areas.*

*\*\*The FY2020 QIS Budget Proposal was comprised of funding from DoD, DOE, NIST, and NSF. The above numbers were compiled by the White House Office of Science and Technology Policy (OSTP), the Office of Management and Budget (OMB), the National Quantum Coordination Office (NQCO), and the Networking and Information Research and Development Program (NITRD).*

The Biden Administration strongly supports increased funding for emerging technologies. Notably, as indicated in the American Jobs Plan, the Administration is calling on Congress to “make an \$180 billion investment that will advance U.S. leadership in critical technologies and upgrade America’s research infrastructure. U.S. leadership in new technologies—from artificial intelligence to biotechnology to computing—is critical to both our future economic competitiveness and our national security.” Additionally, the National Science Foundation (NSF) FY22 discretionary request establishes a new Directorate for technology, innovation, and partnerships within NSF to help translate research into practical applications. The Directorate would work with programs across the Agency and with other existing Federal and non-Federal entities to expedite technology development in emerging areas that are crucial for U.S. technological leadership, including artificial intelligence, high performance computing, disaster response and resilience, quantum information systems, robotics, advanced communications technologies, biotechnology, and cybersecurity.

In response to Section 9412 paragraphs (b)(2)(F), the Director of OSTP will provide a full plan, that leverages final conclusions from paragraphs (b)(2)(D) and paragraphs (b)(2)(E) within 90 days of the release of the FY 2022 detailed budget to achieve the vision of NDAA FY20, Section 9412.

Consistent with Section 9412 paragraphs (b)(2)(A), the Director of OSTP through the establishment of a National Science and Technology Council (NSTC) Joint Subcommittee will coordinate the development of an inventory of terms and definitions used across Federal science agencies and respond to other requirements in the law.

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**[ATTACHMENT 1: AN EXCERPT FROM AJP RELATED TO IOTF]**

The American Jobs Plan

MARCH 31, 2021

*“...Public investments in R&D lay the foundation for the future breakthroughs that over time yield new businesses, new jobs, and more exports. However, we need more investment if we want to maintain our economic edge in today’s global economy. We are one of the few major economies whose public investments in research and development have declined as a percent of GDP in the past 25 years. Countries like China are investing aggressively in R&D, and China now ranks number two in the world in R&D expenditures. In addition, barriers to careers in high-innovation sectors remain significant. We must do more to improve access to the higher wage sectors of our economy. In order to win the 21<sup>st</sup> century economy, we must get back to investing in the researchers, laboratories, and universities across our nation. But this time, we must do so with a commitment to lifting up workers and regions who were left out of past investments.*

*The Administration is calling on Congress to make an \$180 billion investment that will advance U.S. leadership in critical technologies and upgrade America’s research infrastructure. U.S. leadership in new technologies—from artificial intelligence to*

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*biotechnology to computing—is critical to both our future economic competitiveness and our national security. Based on bipartisan proposals, President Biden is calling on Congress to invest \$50 billion in the National Science Foundation (NSF), creating a technology directorate that will collaborate with and build on existing programs across the government. It will focus on fields like semiconductors and advanced computing, advanced communications technology, advanced energy technologies, and biotechnology. The plan is calling on Congress to provide \$30 billion in additional funding for R&D that spurs innovation and job creation, including in rural areas. The plan also will invest \$40 billion in upgrading research infrastructure in laboratories across the country, including brick-and-mortar facilities and computing capabilities and networks. These funds would be allocated across the federal R&D agencies, including at the Department of Energy. Half of those funds will be reserved for Historically Black College and Universities (HBCUs) and other Minority Serving Institutions, including the creation of a new national lab focused on climate that will be affiliated with an HBCU.”*